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ABSTRACT

This document is an annotated list of 20 rules for conducting exercise. Among the rules described are the warm-up rule, the rule for regulation of exercise dosage, recuperation rule, posture rule, glandular fitness rule, maximum respiration rule, and maximum circulation rule. The time of workout and procedures for taking cool baths are recommended. (JA)

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PRESIDENT'S COUNCIL ON PHYSICAL FITNESS AND SPORTS

CURETON'S BASIC PRINCIPLES OF PHYSICAL FITNESS WORK
(Rules for Conducting Exercise)

1. WARM-UP RULE -- Take it easy, 15 to 20 minutes, walk before you run, at least do some preliminary bending, stretching, running in place. Warm-up is protective against injuries and the sudden development of an oxygen deficiency.

2. REGULATION OF DOSAGE -- Build up the intensity of the work gradually; then push up to a peak of effort; then taper off. Several ways to regulate the work are:
   - Walk a lap (block) and jog a block; repeat several times.
   - Then walk several blocks (laps).
   - Walk a lap (block) and jog 2; walk a block and jog 3; walk a block and jog 4; etc. Then walk several laps.
   - Take a long jog, continuous running.
   - Do repetitious fast runs with walks between.
   - Cross-country run, walk, jog.

3. RULE FOR PROGRESSIVELY MORE WORK -- Improvement depends upon a gradual increase in the total amount of work done. The progression is equivalent to 100, 300, 500 calories of heat, corresponding to 30 minutes, 45 minutes, an hour of work with gradual increase in intensity.

4. RECUPERATION RULE -- Keep moving, don't sit down; go from the gym to the showers (hot, then cold) and swim a few minutes if possible. Breathe as deeply as possible and force the breath out explosively. Stretch any muscles which have been worked hard. Avoid smoking, which constricts lung capillaries.

5. WORK VARIOUS PARTS -- Neck, shoulders, chest, upper back, waist, lower back, abdomen, legs and feet. In addition, there should be some running (perhaps in place) or rowing, skating, swimming, cycling, skiing -- some continuous rhythmical work for endurance, forcing the circulation and respiration.

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6. RULE FOR HEART PROTECTION -- Warm-up gradually before exposure to hard work, or extreme cold or extreme heat; avoid severe tensions longer than a few seconds at a time; and try to get enough ventilation for the work being done. Medical exam is recommended.

7. RULE FOR DEEP BREATHING -- Time breathing with each exercise so as to get as full and deep ventilation as possible. This wards off fatigue.

8. USE OF FUEL -- To use up the fuel (food) it is a matter of 1 to 15 calories burned per minute, depending upon the intensity of the exercise. The length of time one exercises at a given rate determines how much fuel is used. To burn one pound of fat requires 4320 to 4380 calories, according to the respiratory efficiency. To burn fat reserves takes time. There is no short cut.

9. POSTURE RULE -- Posture should be relaxed enough to permit good circulation. Strength is needed for the posture maintaining muscles to resist gravity for any length of time. Posture muscles should be trained: neck, shoulders, abdomen, seat, thighs, and supinators of the feet.

10. FLEXIBILITY RULE -- Daily stretching is needed. Any muscle which is held motionless or tensed for very long will become stiff. Flexibility may diminish with age but it may be maintained by daily stretching all joints. It is better to warm-up and then stretch. Stretching in a warm room or under the water is good.

11. EMOTIONAL RULE -- Avoid severe emotions if possible, but if they are brewing, take a walk or leave the scene. Strong emotions are doubly dangerous in unfit people (increased blood pressures because of mental state). Keep fit to stand your emotions...it helps.

12. STRENGTH RULE -- Strength is developed by working against high resistance, lifting loads, pushing and pulling (as with bar bells, medicine balls, pulleys, resistance machines and partner exercises). The muscles must be used hard. Casual housework or easy running is not sufficient.

13. GLANDULAR FITNESS RULE -- Hard exercise stirs up the sympathetic nervous system and also affects the glandular functions. Adrenal function is highly related to endurance. Cold baths, endurance work and sufficient iodine intake are important; and use develops function.

14. MAXIMUM RESPIRATION RULE -- In hard work, maximum breathing is needed to last and to be as protected as possible. Force the breathing in every hard exercise, and avoid holding the breath during a strength effort.

15. MAXIMUM CIRCULATION RULE -- Circulation is usually better in the lying rather than the sitting or standing position. It is better in a cool environment than a hot environment. Rhythmic movement is the greatest boost to circulation but tense (static) efforts may block the circulation more or less. Forced breathing helps the circulation along with walking, running, swimming, skating, skiing, dancing, rowing and rhythmic calisthenics.

16. USE YOUR OWN -- Your own muscles must do the work for best results; don't depend upon passive massage, manipulation, heat or vibration devices.

17. TIME OF WORKOUT -- Best for most people is about 3-4 hours after meals; but people who sit nearly all day need to get up and move about at least every hour, and if possible, every few minutes. Many work before breakfast, or at 12 to 1 p.m.; and many work at night 9 to 10 p.m. One can adapt to any reasonable schedule. Avoid hard work right after meals.

18. TAKE COOL BATHS -- Normally baths should be hot (short) then cool (long) as cool baths are recuperative, help the circulation and stir up the metabolism more than hot baths; but a hot bath is all right just before bed.

19. FORTIFY THE DIET -- The harder and harder the work, the more fortification of the diet is needed with Vitamin B-complex, C and such boosters as wheat germ and wheat germ oil.

20. INCLUDE PROTECTIVE FOODS -- Red, green, yellow vegetables; milk; lean meat.